Remarks/Arguments:

Claim 8-9, 11 and 15-18 are pending.

Applicants thank the Examiner for a second opportunity to discuss the claims and cited references with him, on April 20, 2005, and for his helpful suggestions.

Claim Objections:

Claim 12 has now been canceled.

As requested, claim 18 has now been corrected, at line 11, to read "Baum Welch".

Section 103 Rejections:

Claims 6-9, 11-12 and 15-17 have been rejected as being obvious in view of Vysotsky, Gandhi, Kuhn and Hab-Umbach. Applicants have now canceled independent claim 6. Dependent claims 7 and 12 have also been canceled.

Dependent claims 8, 9, 11 and 15-17 have been amended to depend from newly amended claim 18. These claims have also been amended to provide correct antecedent basis.

Independent <u>claim 18</u> has been rejected as being obvious in view of Hab-Umbach, Vysotsky and Naito. Applicants respectfully submit that these rejection are overcome for the reasons set forth below.

Amended claim 18 now includes features which are not suggested by the cited references, namely:

- forming enrollment speech data as a **first plurality of pair-phrases** using a set of words, the set of words consisting of **a predetermined number** of words, wherein <u>**the set of words are words between one to nine and at least one bridging word "ti"**</u>;
- forming test speech data as a **second plurality of pair-phrases** from the <u>**same**</u> **set of words**, the second plurality of pair-phrases **different** from the first plurality of pair-phrases;
- converting, by a Baum-Welch algorithm, the first plurality of pair-phrases into a **first set** of adapted HMM word models;
- converting, by the Baum-Welch algorithm, the second plurality of pair-phrases into a **second set** of adapted HMM word models;
- **ordering** the first set of adapted HMM word models into **a first sequence**;
- **ordering** the second set of adapted HMM word models into **a second sequence**, the first sequence and the second sequence having the **same order** and the **same predetermined number of words**; and
- comparing the first and second sets of adapted HMM word models using a weighted Euclidean distance.

Basis for newly amended claim 18 may be found, for example, in now canceled claim 6.

Basis for amended claim 18 may also be found, for example, in FIG. 3. As shown, enrollment speech data is formed as a **first plurality of pair-phrases using a set of words**, where the set of words consists of a predetermined number of words. The pair-phrases, as shown in FIG. 3, include 96 and 74, which are formed from five words of 4, 6, 7, 9 and "ti".

Amended claim 18 now specifically recites that **the set of words are words between one to nine and includes at least one bridging word "ti"**.

In a similar manner, test speech data is formed as **a second plurality of pair-phrases using the same set of words**, where the second plurality of pair-phrases is **different** from the first plurality of pair-phrases. As shown in FIG. 3, the pair-phrases of the test data include 64 and 97. These pair-phrases, which are different from the pair-phrases of the enrollment speech data, are formed, however, from the same set of words of the enrollment data, namely 4, 6, 7, 9 and "ti".

As also recited in claim 18, and shown in FIG. 3, the first plurality of pair-phrases are **converted** into **a first set of adapted HMM word models** and the second plurality of pair-phrases are **converted** into **a second set of adapted HMM word models**.

In addition, claim 18 recites that the first set of adapted word models are ordered into **a first sequence**. Similarly, the second set of adapted word models are ordered into **a second sequence**, where the first sequence and the second sequence have the **same order and the same predetermined number of words**. As shown in FIG. 3, the order of the adapted model for the enrollment data is the same as the order of the adapted model for the test data. Finally, as recited in claim 18, the first and second sets of adapted word models are compared using a weighted Euclidian distance.

Hab-Umbach discloses a speech recognition of a word that is based on a stored inventory of sub-word units. As shown in FIG. 2, three utterances 1, 2 and 3 are formed into a whole word model. This whole word model is then compared against a stored inventory of sub-word units. Hab-Umbach does **not** disclose or suggest, at a minimum, **ordering the first set of adapted HMM word models into a first sequence**. Furthermore, Hab-Umbach does **not** disclose **ordering the second set of adapted HMM word models into a second sequence**, where the first sequence and the second sequence have the same order and the same predetermined number of words. Furthermore, Hab-Umbach does **not** disclose that **the set of words are words between 1 to 9 and include at least one bridging word "ti"**.

Vysotsky discloses, in FIG. 2B, a voice recognition circuit which samples speech and compares it to speaker dependent speech patterns and speaker independent speech patterns. Vysotsky, however, does **not** disclose the features missing from Hab-Umbach, namely, **ordering a first set of adapted HMM word models into a first sequence**; and does **not** disclose **ordering a second set of adapted HMM word models into a second sequence**, where the second sequence and the first sequence have the same order and the same predetermined number of words. Furthermore, Vysotsky does **not** disclose **the set of words are words between 1 to 9 and include at least one bridging word "ti"**.

Naito discloses adapted HMM for speech recognition. Naito, however, does **not** disclose or suggest the features, enumerated above, that are missing from either Hab-Umbach or Vysotsky, or both.
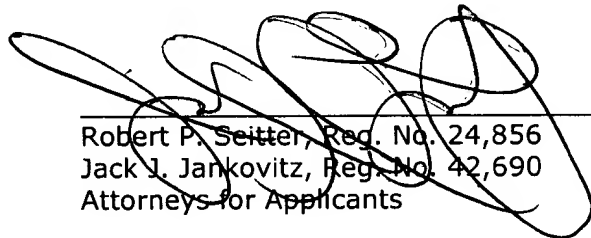
Favorable reconsideration is respectfully requested for newly amended claim 18.

Dependent claims 8, 9, 11, 15, 16 and 17 depend from amended claim 18 and are, therefore, not subject to rejection in view of the cited references for at least the same reasons set forth for amended claim 18. Favorable reconsideration is requested for these dependent claims.

Conclusion

Claims 8, 9, 11 and 15-18 are in condition for allowance.

Respectfully submitted,

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